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/*
    GOPIKRISHNA V
    S3 CSE A
    52
    INSERTION AND SELECTION SORTING
*/

#include<stdio.h>
#include<stdlib.h>
#define MAX 10
int array[MAX],limit;
void swap(int *p,int *q)
{
    int temp;
    temp=*p;
    *p=*q;
    *q=temp;
}
void inputarr()
{
    int i;
    printf("Enter the limit of the array = ");
    scanf("%d",&limit);
    printf("Enter the elements of array\n");
    for(i=0;i<limit;i++)
    {
        scanf("%d",&array[i]);
    }
    printf("Inputted array = ");
    for(i=0;i<limit;i++)
    {
        printf("%d ",array[i]);
    }
}

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        }

        printf("\n");
    }

void outputarr()
{
    int i;

    printf("Sorted Array = ");

    for(i=0;i<limit;i++)
    {
        printf("%d ",array[i]);

    }

    printf("\n");
}

void insertion()
{
    inputarr();

    int i,j;

    for(i=1;i<limit;i++)

        for(j=i ; (array[j] < array[j-1] ) && j>0 ;j--)

        {

            swap(&array[j],&array[j-1]);

        }

    outputarr();
}

void selection()
{
    inputarr();

    int i,j,min;

    for(i=0;i<limit-1;i++)

    {

        min=i;

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        for(j=i+1;j<limit;j++)
        {
            if(array[j]<array[min])
            {
                min=j;
            }
            if(min != i)
            {
                swap(&array[min],&array[i]);
            }
        }
    }
    outputarr();
}

void main()
{
    start:
    printf("\n### MENU ###\n");
    printf("1.Insertion Sorting\n");
    printf("2.Selection Sorting\n");
    printf("3.Exit\n");
    printf("Enter the Choice = ");
    int ch;
    scanf("%d",&ch);
    printf("\n");

    switch(ch)
    {
        case 1:insertion();
            break;
        case 2:selection();

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        break;

    case 3:exit(0);

        break;

    default:printf("Wrong Input\n");

}

goto start;

}

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OUTPUT

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ubuntu@administrator-h
administrator@administrator-hcl-desktop:~/Desktop/DS/LAB/pgm9$ gcc menu_sorting.c
administrator@administrator-hcl-desktop:~/Desktop/DS/LAB/pgm9$ ./a.out

### MENU ###
1.Insertion Sorting
2.Selection Sorting
3.Exit
Enter the Choice = 1

Enter the limit of the array = 5
Enter the elements of array
1
9
2
8
5
Inputted array = 1 9 2 8 5
Sorted Array = 1 2 5 8 9

### MENU ###
1.Insertion Sorting
2.Selection Sorting
3.Exit
Enter the Choice = 2

Enter the limit of the array = 5
Enter the elements of array
1
9
2
8
5
Inputted array = 1 9 2 8 5
Sorted Array = 1 2 5 8 9

### MENU ###
1.Insertion Sorting
2.Selection Sorting
3.Exit
Enter the Choice = 3
administrator@administrator-hcl-desktop:~/Desktop/DS/LAB/pgm9$ 

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